



CHEM-GUARD UNDERWATER

Hydrophilic Epoxy Adhesive for Underwater Applications

PRODUCT DESCRIPTION

CHEM-GUARD UNDERWATER is a two component, solvent-free 100% solids hydrophilic epoxy gel adhesive. It is a heavy bodied, non-sagging gel that will cure and harden underwater. CHEM-GUARD UNDERWATER meets ASTM-C881 Type I, Grade 3, Class B and C.

FIELDS OF APPLICATION

CHEM-GUARD UNDERWATER is intended for use on either steel or concrete surfaces that are constantly or intermittently submerged in fresh or salt water, or in splash zone areas. This may involve:

- Pilings and drainage canals.
- Abutments, ditches and drilling rigs.
- Structural supports and well jackets.
- Piping and many other items.

When coating is desired to resist corrosion in splash zone areas, the surface should be cleaned over an area extending from the top of the splash zone to a depth of one to two feet below the low tide level. With other types of treatment, it is a good practice to clean and treat beyond the affected area to provide a positive, coat and tight seal.

PRODUCT FEATURES

- Non-Sagging gel.
- Excellent adhesion.
- Excellent impact and abrasion resistant.
- Hardens and cures under water.
- Excellent resistance to salt and fresh water.
- High strength.
- Filling voids, and imperfections.
- Solvent free, 100% solids.
- Easy application, mixing etc.

PACKAGING

Product	Packaging
CHEM-GUARD UNDERWATER	2 Gallon (7.57 Liters) Unit Part A: 1 Gal (3.785 Liters) Can Part B: 1 Gal (3.785 Liters) Can
	10 Gallon (37.85 Liters) Unit Part A: 5 Gal (19.85 Liters) Can Part B: 5 Gal (19.85 Liters) Can

TECHNICAL DATA

Technical Data for Unmixed Parts

Property @ 25°C (77°F)	Resin - Part A	Hardener - Part B	Test Method
Solids	100 %	100 %	-
Color*	White	Black	-
Density, Lb/Gal (Kg/L)	< 12.13 (1.45)	< 10.94 (1.31)	ASTM-D1475
Consistency	Thixotropic	Thixotropic	-
Mixing Ratio A: B	1: 1 By Volume		-
Shelf Life	2 years	2 years	-

Technical Data for Mixed Parts

Property (Mixed A & B)	Value @ 25°C (77°C)	Test Method
Mixed Density, Lb/Gal (kg/L)	< 11.53 (1.38)	ASTM D1475
Consistency	Thixotropic	-
Mixed Color	Grey	-
Gel Time @ 5 mils (125 microns), hours	6-8	-
Pot Life @ 3 oz (90 Milliliters), minute	40	C-881
Shore Hardness @ 3 Days, D	75	ASTM D-2240
Bond Strength to Concrete @ 7 Days	Concrete Failure	ASTM C882
Bond Strength to Steel @ 7 Days, Psi (MPa)	608 (4.19)	ASTM C-321
Tensile Strength @ 3 days, Psi (MPa)	5140 (35)	ASTM D-638
Flexural Strength @ 3 days, Psi (MPa)	3090 (21)	ASTM C-348
Compressive Strength @ 3 days, Psi (MPa)	5140 (35)	ASTM D-695
Bond Strength @ 24 hours, Psi (MPa)	510 (3.5)	ASTM C-321
Bond Strength @ 3 days, Psi (MPa)	2050 (14)	ASTM C-882
Water Absorption 24 hrs, %	0.25	ASTM D-570
Elongation (Average), %	25	ASTM D-638
Final Cure, day	7	-

APPLICATION DATA

Limitations: application at ambient or water temperatures below 7°C is not recommended. Where possible, protect treated areas against impact or strong currents for 48 hours. Exposure to temperatures exceeding 65°C for prolonged periods is not recommended.

Surface Preparation: surface of application should be clean and sound. The surface must be free of any dust, dirt, oil, grease, laitance and curing compounds or any other contaminants that impair good bonding.

Wherever possible, roughen-up the surfaces to be bonded using mechanical methods whichever is feasible.

Mixing: stir each component separately. Mix one part of component A with one part of component B by volume into a clean mixing container. Mixing of both components should always be carried-out under dry conditions. Mix the epoxy with a slow speed drill fitted with mixing paddle attachment. Carefully scrape the sides and bottom of the pail during mixing. Blend for 3 minutes.

- Mix only the amount of material that can be used within the pot life.
- Large batches of epoxy will cure much faster than small batches.

- mixed epoxy will cure much faster in hot weather than in cold weather.

Application: method of application will vary depending upon the job conditions and treatment necessary. For underwater work, the applicator needs a skin-diving wet suit, rubber gloves, a life jacket, and a life belt secured to the structure. Rubber gloves, protective clothing and protective creams are always recommended for all other conditions. Mixed CHEM-GUARD UNDERWATER can be applied on the surfaces to be treated by spatula or wall scraper.

- The average thickness of application should vary between 3mm and 6mm.
- The coating is easily molded to the shape or contour of the substrate, provided that the rubber gloves are kept wet.
- The coating should be applied evenly and uniformly without skips or gaps. Coating application can be initiated by depositing a volume of material immediately above the water line and then working or smearing uniformly up and down the area to be treated. Feather edging of all extremities is recommended.

Curing: where possible, protect treated areas against impact or strong currents for 48 hours.

CLEANING

Remove uncured CHEM-GUARD UNDERWATER from tools and equipment with mineral spirit. Cured material may only be removed mechanically.

STORAGE

The product can be stored in a dry, cool place for one year in unopened original packaging. Do not store below +10 °C or in direct sunlight.

SAFETY PRECAUTIONS

- Store all materials at 21°C during application and for at least 2 days prior to use. Low temperatures will increase viscosity of the product causing poor coverage and retarded cure.
- Substrate temperature must be no lower than 10°C during installation and during the full 3 to 5-day cure of the floor.

- When using solvent containing materials in confined spaces, the applicator should use a NIOSH/MSHA approved self-contained breathing apparatus with a full-face piece operated in a positive pressure mode.
- Mask out all areas to be protected. Remove masking tape before the epoxy cures.
- Exhaust ventilation must be provided in enclosed or confined spaces.
- Air conditions and heat vents must be sealed to prevent solvents from escaping to other parts of the building.
- Never allow any mix of epoxy resin and curing agent to remain in the mixing container for a prolonged period of time. The reactions of the two product's components cause a heat buildup. This in turn will cause the epoxy mix to decompose! Noxious fumes will be formed! If this occurs, vacate the area, remove the container to the outside and ventilate the area before returning to work.
- Follow all cautionary direction as printed on container labels.

TECHNICAL ASSISTANCE

Please contact International Chem-Crete Corporation for Technical Personnel.

WARRANTY

LIMITED WARRANTY: International Chem-Crete Inc. warrants that, at the time and place we make shipment, our materials will be of good quality and will conform to our published specifications in force on the date of acceptance of the order.

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